Logic Model for Subobjective 1.1.2: NAAQS for Particulate Matter (Draft) **EPA HEADQUARTERS**

RESOURCES

Budget*

211 FTFs \$43.8 million \$947.185 in 105 grant set-asides [3]

Information Resources

CAA-Title I CAA Title II ISTEA/TEA-21 Motor Vehicle Information and Cost Savings Act Alternative Motor Fuels Act of 1998 EPA Strategic and Implementation Plans

Research results

EPA PM-2.5 Research Input from Subobjective 1-1-5. OSTP/CENR coordinated federal PM-2.5 research. NARSTO results Non-federal efforts. State/local/multi-state.

Stakeholder Input

Clean Air Act Advisory Committee NAS/NRC (10 priorities) SAB/CASAC STAPPA/ALAPCO **ECOS** HEI/PMRA Regulated Industry **Environmental Groups** Public

Partnerships

State/Local/Tribal Agencies PNGV DOE, DOT, FAA, USDA NARSTO NIOSH

*Total FY-2001 enacted appropriations (all offices, all locations) for PM NAAQS = \$126,422,000.

PROGRAMS/ACTIVITIES [4]

Set NAAQS

Set NAAQS for particulate matter (NCEA/OAQPS).

Attainment Status Review

Standard Implemented Strategies/Controls to Attain/Maintain NAAQS State Implementation Plans

NSR/PSD

Clean Fuel Fleets (22 urban areas/diesel particles) Urban Buses (diesel particles)

New Source Performance Standards (OAQPS) [5]

Federal Emissions Standards Development and Implementation

Fuels, Engines and Vehicle Standards (OTAQ) [7] Fuels, Engines and Vehicles Certification and In-Use Compliance

Incentive-Based Programs

Economic Incentive Programs for fine particles Diesel Retrofit (OTAQ) Clean Air Transportation Grants Voluntary Measures Policy Transportation Control Measures Land Use Commuter Choice (partner with DOT)

Measurement and Assessment Activities:

Ambient monitoring- NAMS/SLAMS for PM10 and PM2.5 National Emissions Inventories (NET) (8) Develop source test methods for PM-2.5 emissions.(OAQPS)

Develop emissions factors for PM-2.5. (OAQPS & OTAQ). Develop information systems for storing and analyzing PM-2.5 ambient & emissions data. (OAQPS/OTAQ). PM-2.5 Supersites (OAQPS and ORD)

Model development and analysis (ORD develops models)

Research and Development

Emissions control technologies for engines (OTAQ)

Education and Outreach Activities

AirNOW Online Air Quality Index Air Pollution Training Institute Technology Transfer Network Retrofit Website

Legal Support [9]

OUTPUTS

Set NAAQS

PM-2.5 Staff paper and NAAQS Rule (OAQPS)

Attainment Status Review

Attainment and Non-attainment Designations and Redesignations

Standard Implemented

Strategies/Controls SIP Concurrences Regulations Policies and Guidance Reports of Studies Technical Support/Guidance

Federal Emissions Standards

Regulations (emissions standards for engines, fuels and point sources) Fuel and Engine Compliance Certifications

Incentive-based Programs

Guidance on use of EIPs for fine particles. Retrofitted on-road diesel engines Transportation Grants

Measurement Outputs

PM2.5 ambient data including: mass monitoring data: PM-2.5 Speciated Data, PM-2.5 Continuous Monitor Data PM-10 ambient data Fine particulate test methods QA protocols for PM-2.5 monitoring

Emissions Inventories Emissions factors (AP-42)

Air Quality Trends Reports

Emissions Progress Assessment Reports

Modeling Evaluations Modeling Guidelines

Technical support and guidance

Research and Development New Technologies

Education/Outreach Outputs

Press Releases Air Pollution Training Courses Conferences Speeches Websites

Guides

CUSTOMERS

NAAQS and State Implemented Strategies/Controls

EPA/OGC

EPA Regions States/Locals/Tribes

Industry Public

Trade Associations Env. Associations

Government

Associations Other Federal

Agencies Public Health Agencies

Congress Academia

Federal Emission Standards

Same as listed above including Oil. Utility Industries. **Automakers**

Incentive-Based All listed above

Measurement All listed above

Research Automakers

Outreach/Education All listed above

Public Schools

SHORT-TERM OUTCOMES (Knowledge, Attitudes, Skills, and Aspirations)

Customers become aware of and understand basis for PM-2.5 rule

Customers become aware of and understand EPA's new PM-2.5 regulations and OAR's policies

Customers gain knowledge about the amount and extent of PM-2.5 pollution. its causes and effects, and the primary sources.

> Customers learn how to use new tools (models, monitors, reference methods) in analyzing and developing control strategies.

Customers decide to comply with mandated controls as well as make voluntary efforts to reduce emissions.

Unintended Consequences

Customers or stakeholders disagree with EPA decisions, regulations, policies or auidance.

SHORT-TERM OUTCOMES (ACTIONS)

Strategies/Controls State Implemented

EPA Regions and State/Local/Tribal Agencies implement EPA-HQ policies and procedures for attainment with the Particulate Matter standard.

Customers use the Federal Register Notices, the measurement techniques, FPA's emissions models. EPA guidance, and EPA interpretative memos and informational reports to develop draft SIPs for bringing areas into compliance with the Particulate Matter NAAQS.

Industry prepares to comply with EPA's new 2008 - 2012 PM-2.5 compliance deadline.

Public and other interested and affected parties change their operational and buying behaviors to reduce/ minimize particulate matter emissions and their exposures.

Strategies/Controls Federally Implemented Regulated industries understand

requirements and comply with Federal standards.

Unintended Consequences Customers or stakeholders sue EPA.

RESOURCES

EPA REGIONS

Budget 131 FTFs \$11.8 million

Information Resources

HQ. policies EPA Strategic and Implementation Plans Operating Plans

Regulations Emissions data Census data

Regional Labs

Partnerships

NEPPS MARAMA **NESCAUM** MANE VU WRAP **CENSARA** LADCO WESTAR SAMI

SESARM State/Locals/Tribes

Stakeholder Input

CAA Advisory Committee ECOS STAPPA/ALAPCO NAS/NRC CASAC **Environmental Groups** Regulated Industry

Public

PROGRAM/ACTIVITIES [4]

Attainment Status Review

Standard Implemented Strategies/Controls to Attain/Maintain NAAQS

State Implementation Plans (OAQPS) New Source Performance Standards NSR/PSD Wood Stove Standards (OAQPS)

Clean Fuel Fleets Urban Buses

Federal Emission Standards Development and Implementation

Fuels, Engines, Vehicles In-Use Compliance,

Incentive-Based Programs
Regional Interpretative Guidance on Use of Economic Incentive Programs for Fine Particles

Diesel Retrofit

Clean Air Transportation Grants Transportation Control Measures

Commuter Choice

Land Use

Measurement and Assessment Activities

Ambient Monitoring network for PM10 and PM2.5 including; PM-2.5 Federal Reference Method (FRM) mass-only monitoring sites, PM-2.5 speciation monitoring sites, PM-2.5 continuous monitoring sites.

IMPROVE sites (TEA-21)

NARSTO sites

Modeling

Emissions Inventories

Education and Outreach Activities

Public outreach to explain fine particulates.

Local and Regional trends analyses of particulate emissions for public awareness.

Air Quality Index

Legal Support [10]

OUTPUTS

Attainment Status Review Technical Support Documents (Part 81 Tables)

Standard Implemented Strategies/Controls

PM-2.5 Operating Guidance (policy and program guidance for State/Local/Tribal Agencies) PM-2.5 SIP Regional Guidance, Section 105 Grant Fund Guidance Oversight Reports

Federal Register Notices for SIP revisions.

Source tests

Permit Reviews/approvals Technical support/quidance

Federal Emissions Standards

Technical assistance (motor vehicle compliance, recall, and warranty programs).

Incentive-Based Outputs

Technical support/quidance.

Measurement Outputs

PM10 Monitoring Data PM-2.5 Mass Monitoring Data PM-2.5 Speciated Data PM-2.5 Continuous Monitoring Data

Education/Outreach Outputs

Press releases Websites Conferences Literature/pamphlets Speeches Technical support and guidance

CUSTOMERS

EPA HQ

Other Regional Program Offices

State/Local/Tribal Governments

Industry

Public

Trade Associations

Government Associations

Regional Counsel

Federal Facilities

Congress and individual members

SHORT-TERM OUTCOMES (Knowledge, Attitudes, Skills, and Aspirations)

State/Local/Tribal Agencies understand EPA's regulations/requirements.

State/Local/Tribal Agencies understand EPA policy and guidance.

Industry understands PM-2.5 air pollution regulations.

Changes in public attitudes about environmental controls/programs.

Increase in Public Health

Community's knowledge

Unintended Outcomes

Customers or stakeholders don't agree with EPA decisions, policies, guidance, or regulations.

SHORT-TERM OUTCOMES (ACTIONS)

EPA regions begin to implement their parts of the PM-2.5 requirements.

State/Local/Tribal Agencies implement their parts of the Particulate Matter requirements.

Industry begins to change raw materials used, or rework manufacturing process, or install pollution controls to comply with PM-2.5 requirements.

Public supports environmental activities and programs.

Unintended Outcomes

Customers do not implement EPA policies, comply with regulations, or change behaviors contributing to air pollution.

STATES, LOCAL, and TRIBAL AGENCIES

Page 3

RESOURCES

Budget

\$69.9 million in 105 grant funds

Fees from Title V sources

Fees from FESOPs I&M fees

DOT-CMAQ funds

Information Resources:

EPA regulations

HQ policies and

quidance memos HQ Operating Plans

HQ MOA

State Delegation State Regulations

Technical Support

Partnerships

EPA HQ and Regions

NEPPS

STAPPA/ALAPCO

ECOS

CAPF (opt-in grant)

OTC

MARAMA **NESCAUM**

MANE VU

LADCO

CENSARA SESARM

SAMI

WRAP WESTAR

Stakeholder Input

Regulated community **Environmental Groups**

Public **Politicians**

PROGRAM/ACTIVITIES [4]

Attainment Status Review

Standard Implemented Strategies/Controls to Attain/Maintain NAAQS

State Implementation Plans (SIPs) (OAQPS)

New Title V Permits for Major Sources (OAQPS)

Wood stove standards

Clean Fuels programs for fine particles [e.g.,low sulfur gasoline] (OTAQ)

Tier II Tailpipe standards (OTAQ)

Diesel Engine Standards (OTAQ)

Clean Fleets (OTAQ) Urban Buses (OTAQ)

State fuels program under 211(c) 4(c)

Federal Emissions Standards Implementation

Fuels, Engines, Vehicle In-use Compliance

Incentive-Based Programs

Programs differ smong states - examples include:

- Diesel Retrofit
- Clean Air Transportation Grants
- Transportation Control Measures
- Commuter Choice
- Land Use
- State guidance to industry on Economic Incentive Programs

Measurement and Assessment Activities

Ambient modeling for PM10 and PM2.5 including:

- PM-2.5 FRM sites
- PM-2.5 Speciation sites
- PM-2.5 Continuous sites
- PM-2.5 Supersites

State special/hot spot monitoring

Modelina

Emissions Inventories

Education and Outreach Activities

Public outreach to explain fine particulates.

Local trends analyses of PM-2.5 emissions for public awareness

Air Quality Index

OUTPUTS

Attainment Status

Attainment demonstrations Requests for Redesignations

Standard Implemented Strategies/Controls

State regulations

SIPs and SIP revisions NSR/PSD permits FESOP permits

Compliance assistance

Incentive-Based Outputs

EIPs applied to fine particles Subsidies

Vouchers

Measurement Outputs

Ambient monitoring data/reports for PM10 and PM2.5 including:

- PM-2.5 Mass Monitoring Data
- PM-2.5 Speciated Data
- PM-2.5 Continuous Monitoring
- Special/Hot Spot Monitoring Data **Emissions Inventories** Studies and Analyses

Education/Outreach Outputs

State Trends report on PM-2.5 ambient levels

Data on Local PM-2.5 emissions

Pamphlets

Press Releases Websites

TV and Radio messages

CUSTOMERS

Regulated Industry

Public

EPA HQ Regions

Public Health Agencies

Academia

SHORT-TERM OUTCOMES (Knowledge, Attitudes,

Skills, and Aspirations)

Industry understands permit requirements

Public becomes aware of pollution control requirements and programs.

Public becomes aware of activities that cause or contribute to particulate matter pollution.

EPA hears state concerns with PM-2.5 implementation.

Unintended Outcomes

Industry does not agree with EPA and/or State regulations and requirements.

SHORT-TERM OUTCOMES (ACTIONS)

Industry changes raw materials used, reworks manufacturing processes, installs controls.

Industry complies with PM-2.5 emissions limits by the mandated 2008 - 2012 compliance deadlines.

Public complies with pollution control programs.

Public changes behaviors that contribute to fine particle pollution.

Unintended Outcomes

Industry or public does not comply with EPA and State regulations and requirements or change behaviors contributing to pollution. Note: As a result of programs constantly changing, this model remains a draft.

OTHER EPA AND NON-EPA PROGRAMS THAT CONTRIBUTE TO REDUCED PARTICULATE MATTER EMISSIONS

EPA GOAL 1 PROGRAMS

Subobjective 1.1.1 - Attain ozone NAAQS

Subobjective 1.1.3 - Improve Visibility

Subobjective 1.1.5 - Attain Sulfur Dioxide NAAQS

Subobjective 1.1.6 - Attain Notrogen Dioxide NAAQS

Subobjective 1.2.3 - Reduce Cancer and Non-Cancer Risks From Air Toxics

Subobjective 1.3.1 - Reduce Acid Rain Precursors

EPA NON-GOAL 1 PROGRAMS

Goal 4 - Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems Goal 6 - Reduction of Global and Cross-Border Environmental Risks (e.g., Green Lights, Energy STAR)

Goal 8 - Sound Science, Improved Understanding of Environmental Risks, and Greater Innovation to Address Environmental Problems

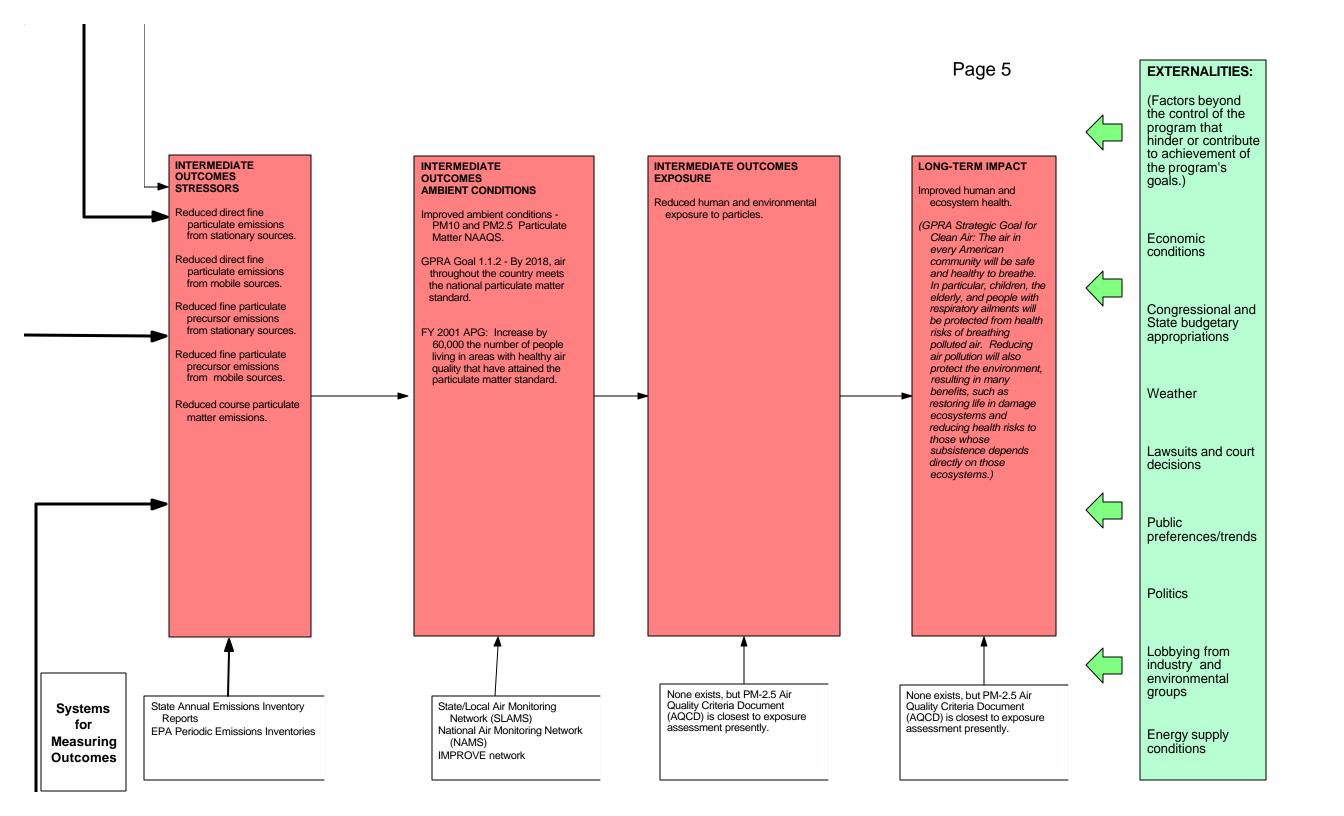
Goal 9 - A Credible Deterrent to Pollution and Greater Compliance with the Law [6]

FEDERAL AGENCY PROGRAMS

Department of Transportation (e.g., Congestion Mitigation and Air Quality Improvement Program, Clean Fuels, Commuter Choice)

Department of Energy

Department of Agriculture



FOOTNOTES:

- [1] = This model was prepared based on EPA planning and budget documents, numerous EPA web-based information, applicable statutes and regulations, interviews with EPA officials on the preliminary versions of the model. We did not discuss the model or its contents with EPA external stakeholders such as Congressional members, Oversight committees, industry groups, environmental groups or state agencies.
- [2] = Presently a PM-10 program is being implemented. A PM-2.5 standard was promulgated in 1997, but implementation through attainment demonstrations and State Implementation Plans is pending the acquisition and review of three years of ambient air monitoring data. Under a Presidential Directive, parts of a PM -2.5 program are currently being implemented. These activities include the collection of three years of ambient monitoring data for future attainment designations and speciation analyses, the gathering of preliminary emission inventory data and issuing guidance. The PM standard is currently under review and new standards are expected to be promulgated in 2002. The model reflects the implementation of the pre-1997 PM-10 standard and how the PM-2.5 program is expected to function following the promulgation of the future standards. Significant activities, pertinent to PM-2.5, are currently underway. These activities are outlined in bold letters to provide the status of the PM-2.5 program.
- [3] = National set-asides are used by EPA Headquarters with the agreement of the states, to provide services to the states (e.g. training delivery) that can be more efficiently accomplished through EPA headquarters than having each individual state perform the function on its own.
- [4] = Activities are divided into categories which capture related activities. The categories list general programs or strategies in place, not the specific activities being conducted. Activities or programs that do not receive funding from this GPRA subobjective are not listed. Cross-cutting infrastructure activities that support all Goal 1 subobjectives (e.g. resource management, information management, Title V permitting, and Tribal programs) are not listed here.
- [5] = EPA sets the national standards and implementation is normally delegated to the states.
- [6] = OECA activities include: developing enforcement-related rulemakings, policy, and guidance; ensuring enforceability of rules; setting national enforcement priorities; investigating and deterring violations; participating in civil and administrative case negotiations, litigation and settlements; managing national enforcement programs; collecting and integrating compliance and enforcement data; developing enforcement initiatives; and, coordinating enforcement activities with States, Locals, Tribes, EPA Regions, OGC, DOJ and other Federal Agencies. Most state and local agencies are authorized to operate federal air regulatory programs which includes conducting compliance monitoring activities such as on-site inspections and initiating appropriate enforcement actions in response to identified violations
- [7] = Development of standards for all types of engines, fuels and vehicles.
- [8] = Fully or partially funded by national grant set-asides.
- [9] = OGC provides advice/legal support in developing rules, handling lawsuits, Congressional Inquiries, document requests, FOIA requests and Discovery Requests from DOJ.
- [10] = OGC provides advice/legal support for: adverse comments on a SIP, non-attainment programs, high profile facilities, source redesignations, Title V issues and increased sanctions.